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EDITED BY WILLIAM HUNTING, F.R.C.V.S.

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THE COUNCIL AND THE SPECIAL GENERAL MEETING,

Space prevented us last week from commenting fully on the question. We pointed out that the regulation of the profession was vested by Charter in the Council, and that no special general meeting could overule the decisions of that body. We recognise to the full, however, that in case of any conflict between the Council and the profession the representative body must bow to the decision of the majority. The difficulty arises when we endeavour to obtain an expression of that decision otherwise than by the votes of the members at each annual election. A council partially elected by the whole corporate body in June cannot acknowledge as the voice of the profession a resolution carried at a special general meeting in August by a majority of six. The question in dispute was no new one, it had been before us all for at least three years, and the evils complained of had been recognised for some months prior to the general election in June.

This is no ground for complaint against the Council that it did not adopt the resolution of the special general meeting. It holds that the action suggested by the resolution would be detrimental to the R.C.V.S., and that the opinion of the majority at the meeting does not represent the opinion of the majority of the profession. In such circumstances the proper course is for the Council to decline to act, and to wait for an unequivocal mandate at next election of representatives.

Another but a different question is whether the *manner* in which the Council dealt with the resolution was right. We think not, and are of opinion that some formal motion should have been adopted as a reply to the resolution. Common courtesy demanded as much, and misunderstanding would have been prevented.

The correspondence which appeared last week seems, however, to take other ground than the mere manner or manners of the Council. It is said that the resolution was "forwarded to the Council. . . . for execution," and another remark is that "a special general meeting is the sole means by which the profession exercises any *authority* over the Council." The clear drift of these expressions is that the Council is bound to alter its course of conduct in reference to any matter if a resolution is carried to that effect by any special general meeting. This position is quite untenable in the face of our Charters, which provide a method of controlling the Council much more regular and orderly, viz., by election. The Council is answerable to the profession for what it does, but a special general meeting is answerable to nobody, and if the Council accepted directions from any irresponsible assembly of veterinarians there would be an end of all order.

Special meetings may rightfully discuss or suggest, but they possess no authority to order, and are certainly not in any way fitted to regulate the doings of the Council.

MR. BLAKE'S PERSECUTION.

Mr. Martin writes suggesting that something more than sympathy should be shown to Mr. Blake, and that those members of the profession who resent the treatment he has received should assist to pay his expenses. We feel sure this proposal only wants putting into some practical shape to meet with very general approval. If Mr. Martin would act as treasurer we should soon find a secretary, and the profession could then make its sympathy tangible.

THE V.S. IN GREATER BRITAIN.

In all English-speaking countries throughout the world members of the Royal College of Veterinary Surgeons are to be found. From most of these countries we hear complaints that the diploma possesses very little value, as it has no legal recognition, and there is no law to prevent unqualified men using any name or title they may choose. In the United States of America the qualified men are fighting for a better position, and in a number of the States have succeeded in getting the legislatures to protect their name and title. In Canada, Australia, the Cape of Good Hope, and other colonies, quackery is unchecked, and the qualified man is disgusted with the competition he meets. What is wanted is some united action between the colonial and home practitioners. They are very willing to help themselves but are numerically too weak to influence their legislatures. Perhaps we could help them through the Colonial Office if we all united in an effort for the good of the whole profession. The Colonies promise a brilliant and useful future for our graduates if we can preserve the ground for them, but if we sit idly by whilst quacks drive them out of their proper position we shall suffer here more acutely than need be from the imminent overcrowding threatening us, as it does all other callings.

The Council of the R.C.V.S. has already given a favourable ear to this movement, and when it is better understood the general practitioner will also wish it success.

A MISSING REPORT.

Mr. H. Singleton, of Ealing, desires to obtain a copy of a report which is out of print. If anyone can guide him to The Supplement to the 20th Report of the Local Government Board, he will be obliged.

CASES AND ARTICLES

ANTHRAX IN INDIA.

By Vet.-Major ADAMS, A.V.D.

Report of an outbreak of Anthrax, which occurred at the Remount Depôt, Hosûr, in the month of June, 1893.

Under this head I shall consider—

1. The general symptoms.
2. The progress and the duration of the disease.
3. The general post-mortem appearances.
4. The general treatment adopted and the effect of Medicinal Agents.

The symptoms varied in detail in almost each case, the disease appearing in the Abdominal Form, the Respiratory Form, and cases occurred in which both forms were apparent. As these forms are in reality the same disease and due to the same cause, the presence in the system of the specific micro-organism, the Bacillus Anthracis, the divisions, except for the purposes of description, are unnecessary.

The Temperature.—This is our earliest guide to diagnosis. It has been said that a rise in the temperature is the only constant symptom in the early stages of Anthrax. There is no standard, or regularity of degree of fever present, relative to other symptoms of ill-health; for instance, a horse may be observed to be dull and off feed, the visible mucous membranes to be discoloured, yet on taking the temperature it may be found that it is but little above the normal. On the other hand, on the occurrence of Anthrax in the double stable in the Stud Lines, the temperature of each horse was taken and several were found to have high temperature, although neither had shown any previous symptoms of ill-health. Periodic observations of the temperature are necessary for, although there is no regularity in the variations, the temperature charts assist us in watching the progress of the disease, and aid us in forming our prognosis.

An excessive temperature indicates great gravity. In four cases the temperature was respectively, 107·4, 107·4, 107 and 107, the first of these rose to 108. These cases all rapidly terminated fatally—one in 7½ hours.

The favourable cases showed a rise and fall with a gradual lowering of the temperature, but a sudden or rapid fall is usually a symptom of urgency, and often a prelude to collapse and death.

The condition of the Visible Mucous Membranes was one of the earliest guides to the true nature of the attack and of its severity, also to the progress of the disease. They were always discoloured and injected and usually tinged with yellow, and had a peculiar œdematous and watery appearance. The discolouration deepened as the disease progressed, and petechial spots appeared. Subsequently, if the disease progressed favourably, the membranes gradually became of their natural colour—"cleared."

This "clearing" was in some instances very slow, which betokened that although the disease was at an end, and other symptoms had subsided, the blood was still impure, and the period of convalescence was prolonged.

The state of the Bowels was similar in each case, in the early stages constipated—the fæces being slimy and in some instances coated with lymph. In but one case was diarrhœa present, and that occurred in a fatal case, twelve hours prior to death. In this instance, blood was also passed.

The Pulse was at first simply a feverish pulse, and varied in frequency and tone according to the degree of fever present. In the latter stages, the blood being deprived of a large proportion of its watery constituents, the pulse became oppressed and small, but not hard. In some cases, before death, the patient collapsed and became cold and pulseless—a few rallied from this condition—but the majority died in a short time.

Abdominal pain was shown, to a greater or less extent, in all cases of the "abdominal" form. In the majority of cases the pain was at no time acute, but continued uneasiness was shown.

The Urine was passed in small quantities, but without evidence of pain. The urine was of a dark yellow colour and was loaded with urates—it was very offensive to the smell.

The Appetite.—This is a remarkable and often a misleading symptom. In some cases the appetite failed at once, and is the first symptom which directs attention to the ill-health of the horse. In others which have terminated fatally, the appetite has continued throughout the case. I look upon this as unnatural, and it may be due to nervous influence—for I have observed in making post-mortem examinations that in horses which continued to feed to the last, the stomach was impacted with the food, which remained in the same state as it was taken, the digestive functions being entirely suspended long before the horse stopped feeding.

Staggering Gait.—This was remarkable at the outset in several cases. In others, it was observable during the progress of the case, but this symptom was by no means constant.

A discharge from the Nostrils was a characteristic symptom in the majority of cases. In the early stages this may be simply watery, or perhaps a little white discharge may be observed, or it may be more of a catarrhal nature, but it is adhesive and adheres around the nasal openings. As the disease progresses the discharge becomes more copious and of a yellow colour, and in some cases tinged with blood.

Local Effusions.—The presence of local serous effusions is one of the most extraordinary features of anthrax, as it affects the horse. When these effusions take place internally they, of course, cannot be detected till examination is made post-mortem, but when they are superficial they assist us in the diagnosis of the true nature of the disease. In this outbreak there were remarkable instances of these local effusions. Some were the usual effusions around the throat in which death was caused in a short time from suffocation—but all that showed effusion around the throat were not fatal cases. There were two or more cases in which, although effusions took place and difficulty in breathing was caused, the disease seemed

to be checked before suffocation was threatened, and the effusion subsequently became absorbed. In one case the effusion was confined to one side of the throat and the face. This did well. One horse had an enormous effusion into the cellular tissue of the near hind quarter and leg, and also into the sheath. The leg was so distended that serum exuded from the skin. In this case there was also a swelling about the throat and face. This horse recovered. In one fatal case of abdominal anthrax, the only swelling observable was about the sheath. There was another case in which one hind limb was enormously distended by serous effusion.

There is no one symptom which will enable us to declare the disease is anthrax—but it is the general consideration of the symptoms enumerated which must be our guide. There are other points to assist us in our diagnosis, such as, often, the suddenness of the attack, and in virulent cases, the rapidity with which it runs its course.

The symptoms of anthrax in the abdominal form are often very obscure, and, from symptoms shown, it may be mistaken for the disease of the liver, in which there is often very high fever, and discolouration of the mucous membranes, in addition to the jaundiced appearance, indicative of liver disorder. It may also be mistaken for simple fever in the early stages before any acute symptoms set in.

In anthrax of the respiratory form, in the early stages, before any diagnostic superficial swellings take place, and when there is a discharge from the nostrils, the symptoms are similar to those of catarrhal fever.

The post-mortem appearances were generally similar. On cutting into the carcase the state of the blood was very remarkable. It was dark in colour and had lost its natural fluidity, In the serous cavities of the thorax and the abdomen, there was always effusion, and in some cases which took the abdominal form there was an extraordinary amount of serous, or more often of sero-sanguinulent fluid. The deposition of yellow gelatinous exudation was remarkable, and the site varied in different cases, but the most constant positions were, in the abdominal form, around the mesentery; and in the respiratory form, about the throat and in front of the chest. In one mare which died, the deposition took place especially around the ovaries; and in two cases, one of which rapidly terminated fatally, the effusion was remarkable about the sheath, and in the loose cellular tissue in that part.

TABLE OF CASES OF ANTHRAX SHOWING FORM OF DISEASE, DURATION, ETC.

Stables.	Date of Attack.	Form of Disease	Temperature on admission	Nature of work.	Date of discharge.	Result.	Duration of disease.	—
	1893				1893.			
Double Stable.	12th June	Abdl.	106·4	Riding School.	14th June.	Died	48 hours.	..
,,	14th ,,	,,	103	Cart Horse	23rd ,,	,,	9 days.	..
,,	18th ,,	,,	105·6	Plough do.	20th ,,	,,	48 hours	..
,,	23rd ,,	,,	105·6	Rested.	24th ,,	,,	35 ,,	..
,,	23rd ,,	,,	105	Riding School.	26th ,,	,,	60½ ,,	..
,,	24th ,,	Abdl. & Resp	105	Plough Horse.	1st July.	,,	7 days 10 hours	..
,,	24th ,,	,,	105	,,	27th June.	,,	81 hours	..
,,	24th ,,	Respiratory	106	Break Horse.	28th ,,	,,	4 days	..
,,	24th ,,	Abdl. & Resp	106	,,	..	Recvd.	..	..
,,	24th ,,	Respiratory	105·2	,,	26th ,,	Died	59½ hours	..
,,	24th ,,	Abdl.	104	Riding School.	..	Recvd.	..	..
Open Stables	24th ,,	Abdl. & Resp	107	,,	29th ,,	Died	5 days 10 hours	..
,,	25th ,,	Respiratory	104·4	,,	26th ,,	,,	34 hours	..
On Picket.	25th ,,	Abdl. & Resp	103·4	Farm Sergt. Hack.	..	Recvd.	..	..
..	25th ,,	..	102	..	..	,,	..	Suspicious Case.
Picket.	26th ,,	Abdl.	107·4	Farm Work	26th ,,	Died	7½ hours	..
Double Stable	26th ,,	Resp. & Abdl	107.4 to 108	Riding School	28th ,,	,,	59 ,,	..
Open do.	27th ,,	,,	105	,,	..	Recvd.	..	..
..	27th ,,	..	103	,,	..	,,	..	Suspicious Case.
..	27th ,,	..	102	..	..	,,	..	do.
Open Stable	27th ,,	Abdl.	106	Break	..	,,	..	..
Picket	3rd July.	,,	107	Riding School	6th July.	Died	3 days	..
,,	3rd ,,	,,	104·4	,,	..	Recvd.	..	..
,,	6th ,,	,,	106	,,	..	..	..	..
,,	6th ,,	,,	105	,,	..	..	..	..
..	9th ,,	..	103·6	..	..	..	..	Suspicious Case.

Total number of cases (excluding those noted as "suspicious") 22. Total deaths 14, percentage 63·63. Recoveries 8, percentage 36·36.

The state of the mucous surfaces was identical in each case, œdematous with hæmorrhagic effusions. This was especially remarkable in the mucous membranes lining the intestinal canal. There was a general engorgement of the liver, spleen and kidneys. The weight of the liver was in all cases much above the normal, and in some cases excessive, 18 lbs., 20 lbs., and 22 lbs. being the heaviest recorded. The spleen was also engorged in all but one case. The kidneys were generally of increased weight, but only in one case was it excessive.

Treatment.—Throughout the outbreak I adopted the same line of treatment, but I may have found it necessary to change the details in special cases. The progress of the disease was in many cases so rapid

that any curative treatment was hopeless. The following is the plan of treatment I adopted—

Primarily, I administered a laxative of linseed oil, 12 ounces; aloes, one-and-a-half drachms. This I found ample to free the bowels. Subsequently I gave a drench containing carbolic acid, half a drachm; common salt, half an ounce, given in cold gruel, every four hours. This draught was continued for two or three days, according to circumstances. In this time the horse would have received 6 to 9 drachms of carbolic acid, and 6 to 9 ounces of common salt. Water was given almost *ad libitum*. By the time these drenches were finished, if the case was progressing favourably the fever would probably have abated, and the discolouration of the mucous membranes would have commenced to "clear." I then ordered the following to be given, either in the form of a ball or a draught, chloride of ammonium, 2 drachms; nitrate of potash, 1 drachm; ginger, 2 drachms. This was continued for a few days, when a course of iron tonics was commenced, given either in the form of sulphate or of the tincture of perchloride of iron. The rationale of this treatment is briefly this—We learn from the experiments of Dr. Koch that "traces of carbolic acid prevents the development of the bacillus anthracis." The salt is given on account of its diuretic and alterative properties, and its action of purifying the blood, as it has the power of holding in solution much nitrogenous matter which would then be excreted from the blood by the kidneys.

In those cases which recovered, stimulants and highly nutritious food was necessary. I gave wheat flour gruel, with raw eggs, and strong sheep's head broth. I have already spoken of the duration of the disease, in fatal cases, but I would here add—

From previous experience of this disease, I am of opinion that there is a somewhat definite period at which time the disease itself is at an end, and when this period is passed, if the horse has the strength, and there are no organic lesions, he may recover. I have previously observed that if a horse lives over the 7th or 8th day, he may recover. My present experience leads me to shorten this period and put it at 6 or 7 days. The blood is, however, left in such a morbid condition, that convalescence is prolonged and death may take place from sequelæ of the disease, or perhaps the patient may remain permanently, constitutionally weakened from disorganisation of some vital organ, as the Lungs, the Liver, the Spleen, or the Kidneys. The local effusions may not be entirely absorbed, and chronic thickening may be left in parts such as the hock and hind limbs, or perhaps around the throat, causing noisy respiration or perhaps roaring.

EXPORT OF HORSES.—The number exported from Great Britain during the ten months ending October last was 9779, against 9464 last year, the value being £416,399, against £504,805.

CATTLE POISONED BY ACORNS.—Upwards of a hundred cattle have died in the neighbourhood of Eynsham, Oxfordshire, during the past week or two from eating acorns. The cattle belonged to several proprietors, Lord Abingdon, of Wytham Park, having lost twenty, and Mr. James Mason, of Eynsham Hall, ten.

VETERINARY SOCIETIES.

LINCOLNSHIRE VETERINARY MEDICAL ASSOCIATION.

A meeting of this Society was held at the Albion Hotel, Lincoln, on Thursday, October 26th, 1893. The President, Jas. Smith Esq., Huntingdon, in the chair. There were also present Capt. Russell, T. A. Rudkin, Grantham; Jas. Mackinder, Peterboro'; Chas. Hartley, Lincoln; W. H. Brooks, Leadenham; T. E. Smith, Market Rasen, Chas. Seely, Lincoln; and J. A. Robinson, Hon. Sec., Market Deeping.

Letters of apology for non-attendance were read from Profs. Penberthy, Williams, and Walley, F. W. Wragg, Esq., President R.C.V.S., Thos. Greaves, Esq., and Messrs. J. A. Clarke, W. G. B. Dickenson, B. Freer, H. J. Goodall, J. W. Gresswell, R. T. Hardy, H. Howse, and F. H. Reeks.

The minutes of the last meeting having been published were taken as read.

Captain RUSSELL said he desired to take the first opportunity of thanking the members of the Society for the resolution of sympathy with him in his late illness which they had forwarded from the last meeting at Peterboro'. He felt very deeply the kindness and consideration of the Society, and it was a source of very deep regret to him that he was unable to write to them on that occasion.

The SECRETARY (Mr. J. A. Robinson) said this Association had the honour to include in its list of members the name of the President of the Royal College of Veterinary Surgeons, Mr. F. W. Wragg. Mr. Wragg was deservedly popular in the profession and had at different times taken a great interest in their Society. He thought it would be a graceful act on their part to signalise his year of office by electing him an honorary associate, and in accordance with the rules of the Society he gave notice that at their next meeting he should propose his election to that honour.

PNEUMONIC DISEASE IN CATTLE.

Mr. J. MACKINDER, F.R.C.V.S., gave an account of a remarkable outbreak of pneumonic disease in cattle. He said that during the course of the summer he was called upon to see some beasts; on arriving he found one dead and another was bad. Upon making enquiries he found that the duration of an attack was about two hours; an animal in perfect health would be attacked and die within that time. He examined the affected animal, it was down and could not be induced to rise, blowing heavily, the tongue protruding from the mouth, presenting the appearances of an animal in the last stages of filaria bronchialis. He made a post-mortem and found nothing the matter with the digestive system; on opening the chest he found the lungs full of fluid, and when the lung substance was cut into fluid oozed out until they became almost empty; there was no congestion or pleurisy. On opening the trachea it was found to be full of mucus, the animal having evidently died of asphyxia. He was puzzled to account for the conditions presented as there was no inflammation or congestion of the vessels of the lungs. The lungs of other animals when cut into gave the same appearances as the first case. He examined the rest of the animals and found them in perfect health, there was no rise in temperature, and the general condition was good. The animals were attacked one after the other until every one of the lot died, but they went off so suddenly that he was unable to see them alive, but in post-mortem examination they all presented the same condition. He could not account for the outbreak at

all until to his great surprise he found that they had been all right until they commenced to be fed on Canadian hay. Every bullock that had eaten this hay died, whilst others on the farm not so fed remained healthy, which seemed to him very remarkable. They all died showing exactly the same symptoms, so far as could be seen they were in perfect health and in two hours they would be dead. There were no symptoms of black leg and no congestion of any part of the body, but the thoracic cavity was full of fluid, as were also the lungs when cut into. They had heard of cases in Canadian cattle which were said to be broncho-pneumonia, but the symptoms in these cases appeared to be like preliminary pleuro-pneumonia the animals going off suddenly after eating this foreign hay. What had caused this? It had occurred at two separate places, and in both the animals attacked were living in the same way. He would like the cause of the outbreak to be thoroughly thrashed out by that meeting.

Capt. RUSSELL asked if Mr. Mackinder took the temperature of any of those which died within two hours.

Mr. MACKINDER :—I had no opportunity, they died so quickly.

Capt. RUSSELL :—You say the chest cavity was full of water, but was there no pleurisy?

Mr. MACKINDER :—No.

Mr. HARTLEY :—Was there no sign of irritant poisoning?

Mr. MACKINDER :—Not the least.

Mr. HARTLEY thought there must be something beyond congestion for them to go in two hours, he rather thought they would have to look further than the Canadian hay, he had had some experience of Canadian hay having fed horses on it and had no bad results. He asked if the sanitary surroundings of the place were good and the animals kept in good condition.

Mr. MACKINDER :—Yes.

Capt. RUSSELL said he was sorry the animals died so rapidly, as if they had lived longer their friends the professors would have had an opportunity of going into the matter, it was a mystery that any animal should have its chest full of water and die of asphyxia in two hours with no rise in temperature. He hoped if Mr. Mackinder had any more cases he would send him a telegram, as he would very much like to see them. He thought it would be interesting if some specialist were to examine the next case microscopically. He said he could not think it had anything to do with eating Canadian hay as there had been such a lot of foreign stuff brought into the country during the last six months. He had had seven tons of this fodder and up to the present had not noticed any ill effects.

In reply to a question Mr. MACKINDER said every one of the 10 or 12 animals was dead.

Mr. HARTLEY said he had recently been with his friend Mr. T. E. Smith to see some cases, and they were not able to find the cause of death; it was very unsatisfactory for he did not know whether it was due to the presence of something abnormal in the pasture. It might be that owing to the shortness of keep in the very dry season we had had, they had eaten something they would not have fed on in an ordinary year.

Mr. RUDKIN having ascertained from Mr. Macinder that about a dozen died, said he thought Prof. Williams would have liked to have known about these cases after his remarks on broncho-pneumonia.

Mr. MACKINDER said Canadian cattle had been kept in this yard for several years. The whole lot were about a fortnight in dying off.

Mr. ROBINSON said these cases were of great interest as bearing on the question of pleuro-pneumonia *v.* American broncho-pneumonia, and it was a great pity there were no microscopic examinations. In reference to their not showing premonitory symptoms, as they all knew cattle were often very bad indeed without showing anything very decided until just before death, as in anthrax, and again the symptoms of many chest diseases in cattle were very obscure. Tremendous alterations might go on in an animal's chest without any visible alteration in its health. It was most unsatisfactory not being able to come to any conclusion, and he hoped that if Mr. Mackinder unfortunately should have any more of these cases he would send a carcase to London or Edinburgh and they would then get a little more information respecting the disease.

Mr. HARTLEY asked if there was any fluid in the pericardium, and Mr. Mackinder replied in the affirmative, stating that it was of a pale straw colour.

Mr. RUDKIN said that considering the very great quantity of this hay that had been used in this country lately it was a wonder that there had not been more of these outbreaks.

Capt. RUSSELL asked if they did not think the Association was in a position to take this matter up. He proposed that if another case occurred Mr. Mackinder send a whole carcase to London at the expense of the Society.

The proposition was seconded by Mr. Robinson and carried unanimously.

The PRESIDENT said they were exceedingly obliged to Mr. Mackinder for bringing forward so interesting a subject, it appeared to be a mystery what the disease was, and he was afraid he was not in a position to elucidate the cause, but it struck him that as they were all feeding on Canadian hay, if it were due to bacilli in the hay, it was rather strange that they got an interval of a fortnight between the first and last cases. He agreed that it was quite possible to get great alteration in structure without much outside show. He remembered a case of pleuro-pneumonia where the animal was supposed to have recovered and got fat, but when it was killed one lung was found to be an entire mass of disease. It gave him great pleasure to propose a cordial vote of thanks to Mr. Mackinder for bringing the subject before their notice.

This was seconded by Mr. Hartley and carried, Mr. Mackinder suitably replying.

POISONING BY ACORNS.

Mr. HARTLEY said he should be glad to know if any one had come across a diseased condition in cattle through eating acorns, and whether there was generally diarrhœa.

Mr. MACKINDER said he had seen diarrhœa, and the fæces were very black. Opinions were expressed that cattle suffered from tannic acid poisoning after eating acorns, and that pigs were not injuriously affected.

DIETETIC DISEASES.

By J. A. ROBINSON, M.R.C.V.S.

Mr. President and Gentlemen,—In coming before you to-day in the position of essayist I must ask your indulgence in the first place for appearing in that character at all, and in the second for the many omissions and deficiences which must necessarily occur in a short article on such an extensive subject as the treatment of the dietetic diseases of the horse.

After the brilliant papers we have had during our last year's meetings from Profs. Axe and Penberthy, anything I may have to say must appear very commonplace indeed, but as after the most sumptuous feasts we must at some time return again to ordinary fare, I hope you will take the repast offered to-day with as good a grace as possible. I have chosen my subject not because I have anything new or original to tell you thereon, but because I thought it a subject which would be of interest to the members of the Society, and one which in the discussion to follow would induce most of the gentlemen

present to place their experience at the disposal of their fellow members.

I intend this morning to refer principally to those cases of abdominal disease in which we have impairment of function of the alimentary canal and pain of greater or less severity, and which are generally brought about by an alteration either in quantity or quality of the patient's diet. I have no need to detail the symptoms of this class of diseases, which are as well-known to every gentleman present as to myself, and would only be a waste of valuable time, but I may say that in treating an abdominal affection, a case where the pain is of varying intensity it is much preferable to one where it is persistent for any length of time in the same degree. In the latter class of cases though the pain may be but comparatively slight it is likely to continue for a greater length of time and is very often due to structural complications which bring the case to an unsatisfactory finish.

In my experience the large intestines of the horse are much more liable to dietetic disease than any other part of his digestive system, this is probably due to the greater length of time the food ingested remains in those organs, as we may often find post-mortem that the stomach and small intestines may empty themselves very rapidly, but no matter how long the animal had remained without partaking of food, the large colon always contains a considerable amount of partly digested material. Another reason lies in the lower vitality and vascularity of these organs, otherwise it would be difficult to explain why diseases of septic or nervous origin such as enteritis and volvulus are usually situated in the small intestines, and those of dietetic origin have their location in the posterior bowels.

The principle disease affecting the stomach of the horse is indigestion, and even this is of comparatively rare occurrence; it is usually due to change of food, particularly in the autumn of the year when horses are brought up from grass and put on hard food. In many of these cases we find that the horse eats well for a few days and then gradually goes off until it becomes difficult to get him to feed at all.

The condition which probably exists in these cases is hyperæmia of the gastric mucous membrane produced by the excess of work suddenly forced upon it, and our duty is to bring up the tone of that organ to the proper performance of its functions. This is best brought about by the administration of a laxative, even though the bowels may be well open, as the slight diarrhœa sometimes present in these cases is an effort of nature which it is our duty to assist. I usually give a pint of linseed oil and order the animal to be kept on soft food, such as hay, bran, and crushed oats for a few days, and then treat him with arsenic in from oz. gs. to oz. igs. doses of liquor arsenicalis according to the size of the patient. This usually acts like magic, and I have often seen cases which had been treated with ant-acids and vegetable and mineral tonics for several weeks, restored in the course of a week or ten days to perfect health. The most important point about this drug is never to continue its use after the desired effect has been produced.

A fruitful source of indigestion in the fens during the last two years has been feeding horses on wheat, which has now, owing to its cheapness from a market point of view, came to be almost universally used in wheat growing districts as food for the farm horses. Even when crushed or soaked there appears to be something in its composition which does not harmonise with the horse's digestion, and wherever it is used many cases of indigestion followed by impaction of the bowels erythema and grease are sure to be found. In treating these cases I usually give a full dose of aloes, followed by arsenic, and order the diet to be changed. I have found, however, that a horse that has had indigestion from feeding on wheat is sure, during the winter at any rate, to give a considerable amount of trouble.

Impaction of the stomach and tympanitis are in the horse comparatively infrequent, and the former particularly difficult to diagnose correctly, indeed as far as I am aware there is no symptom which enables us to positively assert that it exists, unless it is accompanied by tympanitis, when the eructation of gas from the stomach and flow of saliva from the mouth point definitely to the seat of the malady. At one time I always treated these cases with chloric ether which usually produced the result desired, but on giving a little reflection to the subject I came to the conclusion that the favourable effects of this drug were due not to its stimulating properties but to the antiseptic action of the chloroform it contains. Following out this idea I commenced giving chlorate of potash, which I found produced the result desired at a much cheaper rate, which in these times of agricultural depression is, in a district such as mine, no small consideration. Of course if the symptoms are very urgent they must be treated; for that purpose nothing can be better than an injection of morphia and morphine hypodermically. I do not think that in this disease the administration of purgatives is of advantage whilst the symptoms are urgent, and as they only increase the irritation, retard recovery, and in some cases turn what might have been a successful case into a fatal one, by inducing rupture of the stomach, though when danger is over it is as well to clear out the bowels and give the digestive system a fresh start.

In reference to the point I have just mentioned, the following case may be of some interest. One night last spring I was called up to look at a mare which a farmer had brought to my place. He said she had been uneasy most of the day, and had had continual eructation of gas from her stomach. On examining her I found pulse, temperature, and respirations normal, the animal looked rather fuller than usual, but ate readily whilst in my stable. I considered there was very little the matter with her, gave oz.ij. aloes, told the man she would soon be alright again, and went to bed. In about an hour the man came back saying the mare was much worse and asking me to go and see her at once. It appears he had trotted her home a distance of about 1½ miles, and on putting her into the stable she ate and seemed alright for about ten minutes when she suddenly ceased feeding, began to breathe heavily and broke into a cold sweat. On arriving I found all the symptoms of a speedy visit to the knacker's yard, and giving an injection of chloral hyd. said I would make a call in the morning; the mare stood immovable for about two hours and then dropped down dead. On her being opened I found a large rupture in the pyloric portion of the stomach, which was larger than usual and filled with half-digested wheat chaff, a considerable amount of which had escaped into the abdominal cavity. I have no doubt that the physic and violent exercise turned the course of the case from a favourable to a fatal direction.

Proceeding in the natural course, from the stomach to the bowels, we have in our text books elaborate divisions of the diseases of these organs, and—on paper—admirably lucid methods of differentiating the affections of their five or six divisions. By far the most explicit of these is a paper read by Vet.-Capt. Smith at the National Society's meeting at Peterboro' in 1887. After reading this admirable essay and making a study of the plates connected with it, I thought it would be impossible afterwards to have any doubt in my mind as to the exact locality of any bowel affection I might be called upon to treat, but I regret to say that my sanguine expectations have not been realised and am no nearer than before in being able to state with certainty whether the horse has a twist of the small intestines or a calculus in the colon, and the principle is just as

difficult to apply when we try to determine the exact situation of the true digestive diseases.

This being the case I am not in the habit of trying to determine what part of the bowel is affected, but, unless there is some symptom which seems to localise the attack, treat the alimentary canal as a whole. Bowel diseases due to dietary errors may be conveniently divided into cases with tympanitis, and cases not aggravated by this condition and which are usually first brought under our notice as gripes or colic. There are few of these cases which we see before they have had one or more drenches of a more or less beneficial character, but no matter what the previous treatment may have been, where there is cessation of the action of the bowels and no signs of inflammation it is imperative to at once give a full dose of aloes, from half to one dram more than would be given to the animal as an ordinary purgative, in this way we often avoid impaction of the bowels as they are stimulated to increased action before they have lost their tonicity; in proof of this we often find cases which we thought of slight importance and in which we neglected giving a cathartic, prove more troublesome than graver cases in which aloes were administered in the first stages. In the treatment of an ordinary case the pain is best relieved by chloral hydrate, which hypodermically is very effective in its action for this purpose, but unless the pain is very severe large doses of sedatives should be avoided as they, by lowering the nervous sensibility of the bowels, retard the action of the purgative which would remove the cause of all the mischief.

I well remember at a meeting of this Society some years ago hearing Mr. Banham, of Cambridge, state that his custom in these cases was to administer a dose of physic and talk to the owner till the patient recovered. In the accepted pathology of the disease this is of course the most scientific method of treatment, but unfortunately veterinary surgeons are not yet able to live by science alone, and those practitioners who like myself are not gifted with the persuasive eloquence of Mr. Banham are obliged to amuse the patient's owner with something more tangible than the sound of their own voices.

The usual routine in a colic case in addition to the medical treatment is to give enemas. Blister the abdomen and occasionally use the catheter, I cannot say that any of these operations do any particular harm, but they seem to me as a rule to confer about the same amount of benefit; there can be no greater farce than the administration of an enema to the horse by the ordinary method. I have no doubt that given with Smith's rectum tube they are of advantage, but by the ordinary method with a funnel not more than two feet long it is impossible for the fluid to advance far enough to effect the desired result. By far the most sensible method is to inject about a pint of solution of aloes or of any sedative we may think necessary at blood heat, this will be retained and absorbed, and will produced as good results as when the medicine is given by any other channel. The great majority of cases when thus treated will recover rapidly, but if action of the bowels does not take place within 36 hrs. after the physic we have probably to deal with either paralysis of the bowel from debility of its nervous force, or a mechanical blocking of the passage, and inability of the muscular tissue to contract, as a result of the undue tension. As these two conditions cannot be distinguished ante-mortem, their treatment is identical; we should keep the patient warm, relieve the symptoms of urgency as they arise, and endeavour to restore the action of the bowels by the use of neuro-muscular stimulants, of which nux vomica is by far the most effective. I am not an enthusiast for physostigmine as this drug though usually producing the desired result, in cases of debility of the bowels has depressing after effects which impair the value of its action; of course in cases of mechanical impaction physostigmine is exactly the thing we want, and given in full doses, one of two things is certain to happen, either the accumulated material will be removed or the bowel of your patient will be ruptured in the attempt to remove it. For myself I am a firm believer in the use of nux vomica in these cases, having often seen one dr. of this drug given daily, restore the tone of organs which had been deficient in action for two or three weeks All purgatives should be avoided in these conditions and particularly linseed oil, which having no purgative action on the large intestines, aggravates the existing condition by forcing into them the contents of the anterior bowels.

A graver condition is that in which we have the complication of abdominal tympanitis. Our object in these cases must of course be to get rid of the existing gas and to prevent the formation of any more, and the treatment will vary according to gravity of the symptoms. In moderate cases a dose of aloes in solution, with a stimulant such as aromatic ammonia will usually produce the effect desired, but where the extent of the tympanitis makes it dangerous to give aloes, I have found the best thing to administer is oz.iij or oz.iv of Sodii sulph. with dr. ss. of carbolic acid, and repeat in an hour if necessary; in cases not arising from enteritis or structural changes, this will as a rule act favourably, but the patient should always be carefully dieted for a few days afterwards. I very seldom puncture the abdomen, as although we are continually being told it can be done with impunity when and where you like, I have had two cases where the return of the tympanitis after the puncture was accompanied by inflammatory conditions not present before the operation, and both of these terminated fatally.

I have had one very successful result from puncturing per rectum as recommended by Capt. Russell, but in my experience it is very seldom that the distended bowel can be reached by this method of operation.

Cases of recurrent tympanitis are a source of great annoyance to the practitioner and are generally due to a grave condition of some of the abdominal organs. A case of this description which I have just had under treatment may be of some interest. About a month ago I was asked to see a mare which the owner said had had colicky pains for two or three days, she was about sixteen years old and had never had an illness during the six years she had been in his possession, two or three colic drinks had been given. On examining her I found the pulse and mucous membrane very little altered from normal, no appetite, or action of the bowels. Temperature 100 F., slight tympanitis and the pain of a subacute character. Gave aloes dr. ij and thought the case was not likely to be a serious one. In two days the action of the bowels was natural, but there was always slight pain, depression, and abdominal enlargement. The appetite and general conditions improved but the attacks of tympanitis recurred in a serious degree, at intervals of from three to six days. During these attacks every available method of treatment was adopted, including puncture of the abdomen on four occasions. I felt that there must be something seriously wrong, but at the end of three weeks the case seemed to take a turn for the better, ate well and had not an attack for a week, when one morning she was found dead in the stable; her abdomen was enormously distended, and a severer attack than usual had evidently finished her off. The point of interest comes in the post-mortem, where the bowels after being relieved of the gas were apparently healthy, but the liver was almost absent, that organ weighing only three pounds, and the tissue breaking down on the slightest pressure. The wonder is how this animal could have appeared healthy so long with a liver in this condition, but she certainly showed no marked symptoms of hepatic disease during life, except perhaps the lowness of temperature.

Gentlemen, I must apologise for the length of time I have imposed myself on your patience, but on a subject of such general interest a paper of any length must still leave untouched many important points. I can only say that if my effort has the result of bringing forward the wealth of practical experience possessed by the members present, the slight trouble I have taken will be amply repaid.

DISCUSSION.

Capt. RUSSELL, when the essayist had concluded amidst applause, said, this paper showed a large amount of original thought and research, and he had been very much interested in it, they were under a deep obligation to Mr. Robinson for the time and care he had devoted to the subject. On every subject they found opinions differ no two veterinary surgeons treated a case exactly alike, and no two doctors did so; they might agree to differ but they all thought their own methods were better than their neighbours. He thought cases of indigestion affecting the stomach of the horse were much more common than supposed by the essayist, these cases were often accompanied by tympanitis, the animal so attacked was constantly scraping one fore foot, sneezing and turning up the lip, there was in these cases irritation of the coats of the stomach which might lead to rupture. He believed when a cart horse came home from work and had a little long stuff given him it was better for digestion than commencing to feed rapidly on cut stuff which often produced these cases. Mr. Robinson in his paper suggested linseed oil, he himself had seen the most deleterious effects from its use, he now never used it at all. He remembered a horse in Grantham being given a pint of linseed oil which was rancid, and the results were disastrous. He did not believe in the short enema pump as now used at all, but he had great faith in the Gamgee funnel which, when properly used, would convey a very large quantity of fluid into the bowels. With the pump they might pump up a bucketful but it came back immediately. He had great faith in puncturing the abdomen in tympanitis, he had a case in his infirmary which had been punctured five times since the previous morning. He must however warn them against puncturing mares per rectum. Lately he had a case of a mare suffering from tympanitis in which the colon appeared to be forced right back towards the anus, he punctured her twice per rectum but without result, he then punctured the flank and removed the accumulated gas and the animal recovered. About a fortnight after the mare evinced signs of pain of a subacute character which gradually increased until death, which was due to septic peritonitis commencing in the uterus which had been penetrated by the instrument. He had only had two accidents from puncturing in the flank, and they were abscesses forming at the point of puncture; to avoid this he advised washing the instrument in an antiseptic solution before performing the operation. He once punctured a pony in fourteen places and the result was a complete recovery in an astonishingly short time.

Mr. MACKINDER agreed with Capt. Russell that they often got tympanitis of the stomach, particularly in cases where animals were fed on straw mixed with roots, and in these cases there was always a gurgling of wind as if the animal was being choked. He did not object to giving linseed oil, and in cases of stoppage or indigestion due to eating potatoes he thought oil was the best thing to administer. He had lately attended a two year old colt suffering from stomach indigestion, he was not rolling about but was scraping and in pain, there was scarcely any pulse at all, and passing up the œsophagus was a continual regurgitation of wind. The animal died and on post mortem his stomach was found to be ruptured and full of undigested new corn. He thought that in cases of stoppage and indigestion a bold dose of physic was the best method of treatment.

Mr. HARTLEY asked if care of the teeth did not go a long way in preventing these cases of dietetic disease, he had no faith in the enema pump, but preferred the funnel and did not think it advisable to give purgatives in cases of indigestion with laminitic symptoms.

The PRESIDENT said he desired to thank their Secretary for bringing before them so able a paper. He had had three cases of impaction of the bowels due to horses just up from grass being put on to wheat, straw, chaff The efficacy of the enema pump depended on the condition of the bowels, if they had contraction of the bowels or tympany, any amount of fluid they might force in would be soon ejected. He had great faith in puncturing the bowels in tympanitis.

Mr. ROBINSON in replying to the discussion said he was very much obliged to them for the lenient way in which they had treated his paper. On such a wide subject as this there was bound to be a great difference of opinion and they were all naturally inclined to think their own treatment the best, and he found that as a rule if there was anything the average practitioner prided himself upon more than his treatment of milk-fever, it was the composition of his colic drink. He thought cases of tympanitis often died from absorption of septic gases, and he was of opinion that for preventing decomposition in the alimentary canal there was nothing equal to sulphite of soda with carbolic acid.

Mr. RUDKIN proposed a vote of thanks to Mr. Robinson for his interesting paper. This was seconded by Capt. Russell and unanimously carried.

THE VETERINARY PROFESSION IGNORED.

Mr. RUDKIN proposed a resolution regretting that the profession was overlooked by the Board of Agriculture in the appointment of veterinary inspectors, and that the secretary be requested to communicate with other societies with a view of steps being taken to remedy the matter.

Capt. RUSSELL seconded the resolution, saying that he considered it a gross insult to the profession that inspectors were appointed in the way they were. How could an ignorant man who knew nothing of the internal economy of the domestic animals tell whether they were diseased or not. They were allowed the privilege of calling themselves veterinary inspectors, but in Kesteven a cattle inspector, who was simply a retired policeman, was allowed to go about the country detecting disease, declaring animals healthy or otherwise. He thought it would be more dignified if the whole of the veterinary inspectors presented their resignations to the County Councils as a means of showing they felt the indignity to which they were subjected.

Some discussion, in which Messrs. Hartley, Smith, Mackinder, Robinson and the President took part, then took place, when it was elicited, that the state of things of which the resolution complained only obtained in the Kesteven and Holland divisions of Lincolnshire, it was decided to adjourn the consideration of the subject to a future date.

The meeting then concluded with a hearty vote of thanks to the President, on the proposition of Mr. Hartley seconded by Capt. Russell.

JOHN A. ROBINSON, *Hon. Sec.*

GLASGOW V.M.S.

The opening meeting of the above society was held in the lecture hall of the College on Wednesday evening, 1st inst. Prof. Limont presiding, supported by Dr. McCall, Mr. Trotter, M.R.C.V.S., and others. Besides several visitors, there was a good attendance of students. Essays on "Pneumonia," and "Impaction of the bowel and colic," were read by Mr. Houston and Mr. Clode respectively. An animated discussion followed.

EXTRACTS AND NOTES.

EDINBURGH HEALTH LECTURES.

Animal Diseases Transmissible to Man.

On Saturday evening Professor M'Fadyean, formerly of the Dick Veterinary College, Edinburgh, and now of the Royal Veterinary College, London, inaugurated a twelfth course of Edinburgh Health Lectures by delivering, to a large audience in the Free Assembly Hall, the first of three lectures on "Diseases of Animals Transmissible to Man."

Lord Provost Russell occupied the chair, and in introducing the lecturer expressed the pleasure he felt at seeing the Edinburgh Health Society resuming its courses of lectures. They owed the present course, he added, to the co-operation of the Combe Trustees, and they were fortunate in having for their lecturer one who was a distinguished medical graduate of their University, and who was one of the most esteemed professor at the Dick Veterinary College before he was called away to a more important sphere of work in the South. (Applause). The subject upon which he was to speak was important in itself for their own instruction, but still more as a guide to public opinion in regard to questions which were rising at this very time as to the relations of public health to the health of the animals with whom they lived. (Applause).

Prof. M'Fadyean remarked in the outset that in the present lecture he proposed to treat of diseases transmissible to man through contact with animals. Speaking in the first instance of mange or itch, he showed how it was communicable to man from the horse, the dog, and the cat, and even, though less frequently, from the pig, the ox, the sheep, and the goat. Dogs and cats with mangy skins ought on no account, he said, to be allowed access to rooms inhabited by human beings; and where the rule to avoid all contact could not strictly be observed as in the case of persons who had to take care of the mangy animals, it was well to take other precautions, such as washing the hands and arms with carbolic soap after each occasion of contact. Treating next of ringworm, he explained how in one or other form it was found in the cat, or in young cattle, or in the horse, how readily it was transmissible to man, and how contact of any kind with cats or other animals that had unhealthy-looking skins ought to be avoided. Proceeding to speak of glanders and farcy, Prof. M'Fadyean said that in respect of incurability and ease of transmission to human beings, glanders ranked as one of the most important diseases common to man and animals. Fortunately, there was one circumstance that rendered the disease of much less interest to an Edinburgh audience than to the inhabitants of, say, Glasgow or London—the circumstance that Edinburgh had at the present time a clean bill of health so far as glanders was concerned. Every year a number of people—chiefly grooms, carters, and coachmen—lost their lives through glanders, and in nearly every instance the disease was caught through discharge from the nose or from a farcy sore having been brought into contact with the hands, and carried by these to the nose. Horse-slaughterers and veterinary surgeons conducting the post-mortem examination of glandered horses had in many instances become infected, but such accidents were now less frequent since the danger of transmission in this had become generally known. It would, he stated, be an easy matter to stamp glanders out of existence in Scotland. Last year there were only seventy-nine cases of glanders reported in Scotland, of which two occurred in Mid-Lothian, and the remaining seventy-seven in Lanark. Glasgow was the breeding place for glanders in Scotland, just as London was for England; and if a little more energy were displayed by the local authorities in Lanarkshire in dealing with the disease, the last case would soon be seen there. Coming, in the concluding portion of his lecture, to the subject of rabies and hydrophobia, Prof. M'Fadyean said that by reason of its deadly nature and its distressingly painful course, rabies was the most terrible of all the diseases that man might contract from the lower animals. Although the disease was well known to the ancients, it was only within quite recent times that correct notions had been acquired regarding its mode of origin and transmission. It had, of course, long been known that the disease was transmitted to human beings by the bite of rabid dogs and other carnivora, but it was only during the present century that this had been proved to be the only mode of transmission, whether among animals of the same species or from one species to another. At the present time they had the most absolute assurance that no dog ever became rabid except after the bite of a rabid dog or other animal; and the same remark applied to rabies of the other animals, whether domesticated or wild. If in the case of a person bitten by a rabid dog the wounds were not very extensive or deep, and if, within a few minutes after infliction, they were cauterised—seared with a hot iron—or treated with tincture of iodine, or strong solution of carbolic acid, the germs might be destroyed before they had had time to be carried deeply into the tissues. But in no case could this kind of treatment give complete assurance that the bitten person would not become infected, and yet, until a few years ago, nothing more could be done. Thanks to the magnificent researches of Pasteur that was no longer the case, and even when bites had been numerous and deep, and when no local treatment had been applied to the wounds, the person's life might still be saved. Experience had shown that out of every hundred people bitten by rabid dogs, twelve or fourteen died from hydrophobia if not treated by Pasteur's method. If treated by that method the fatal cases sank to less than one per cent. (Applause).

AN IRISH VETERINARY SCHOOL.

At the opening of the winter session of the Catholic University School of Medicine, the inaugural address was given by Dr. Nixon, who after pointing out many reforms required said:—"Let me mention one other matter as an illustration of our apathy in developing resources at our hand. A short time ago I received a letter from his Grace the Archbishop asking me if it would be possible, in the interest of Irish students, to establish a veterinary school in Dublin, and if it could be organised in connection with this school. No proposition could, I think, bring home to us more vividly our want of enterprise and progress. An almost exclusively agricultural country, with an unrivalled prestige in the breeding of horses, depending for a large portion of its wealth upon animal produce of various kinds, having yearly those great shows which, under the fostering care of the Royal Dublin Society, have made Ireland conspicuous, I may say, throughout Europe, is without a school for the education of its veterinary students, who are obliged to seek in London, Edinburgh, or Glasgow the education for which no provision is made at home. Since I received the Archbishop's letter, I visited the veterinary school in Brussels,

and the Royal College of Veterinary Medicine in London, and both institutions appear to be perfectly organised. Through the kindness of Professor Shave, the Lecturer on Anatomy in the London College, I had an opportunity of inspecting both school and hospital, and noting all the facilities which were afforded to the student for the study of diseases affecting horses, cattle, and domesticated animals generally. In addition to the school in London, there are two veterinary schools in Edinburgh, and one in Glasgow. It would be impossible for us here, for many reasons, to organise or take up the subject of veterinary medicine, We have our hands quite full, and our resources are, unfortunately, as I think I have shown, strictly limited. I may, however, point out that the idea of the Archbishop, of having veterinary medicine taught in connection with a school of human medicine has the sanction of high authority. The celebrated anatomist Vic d'Azir most strongly urged that veterinary medicine should be made a preliminary course to the study of human medicine, and that a veterinary school should be annexed to every medical college in France. This view was very strongly supported by Tallyrand, who read a paper on the subject before the National Assembly in 1790 urging its adoption. Bearing in mind the number of diseases that are communicable from animals to man, and the great advantage to be gained by the study of comparative pathology, there can be little doubt but that the establishment of a veterinary school in Dublin would have a healthy influence upon our medical school, and I hope that this aspect of the question may not be lost sight of by the profession generally. I am sufficiently sanguine to hope that now that this matter has been brought prominently under public notice some good result may be obtained. The vice-chairman of the Agricultural Committee of the Royal Dublin Society, Mr. James Talbot Power, one of those who

Do good by stealth and blush to find it fame,

has taken up the matter warmly. The O'Conor Don, the Right Hon. C. T. Redington, Mr. C. J. Blake, the well-known sportsman, and others who take a keen interest in the breeding of horses at home, are fully alive to its importance, and have promised to aid the movement, so that some good result may follow from the initiative taken by the Chancellor of our University.

SOUTH DUBLIN UNION.

The weekly meeting of the guardians of the South Dublin Union, was held in the boardroom of the workhouse. The chair was occupied by Mr. J. Lalor, J.P.

THE VETERINARY INSPECTOR AND VALUER.

A report of the Visiting Committee was read by the Clerk (Mr. Phelan). The report stated that the committee had resolved that, having regard to the terms of the appointment of Messrs. Lawlor, V.S., and Magrane, who have important duties to attend to under the Contagious Diseases (Animals) Act, no alteration be made in their position or salary. This resolution was carried by the committee on a division of seven to one.

Mr. John Byrne moved the adoption of the report. He said that Mr. Lawlor had been appointed fifteen years ago to the position which he now filled, and he was appointed to the position to inspect cattle suffering from pleuro-pneumonia in order that compensation be made for animals slaughtered under the Act. Both he and Mr. Magrane, the valuer, were appointed permanently, and the committee were therefore of opinion that they had no right, even if they had the desire, to interfere with their position. No doubt since the Order in Council was withdrawn the duties might not be quite so heavy as heretofore; but were they to do an injustice to two faithful officers, the necessity for whose duties undoubtedly existed, having regard to the prevalence of sheep scab and swine fever, and the possibility of the breaking out of pleuro-pneumonia.

Mr. M'Donagh seconded the motion.

Capt. Boyd said he was the one member who voted in the minority at the committee, and the point he made was simply whether they were justified in paying £450 to two gentlemen for doing nothing. These gentlemen had no work to do, and surely they should not continue to pay these salaries. Mr. Lawlor got £200 and £50 travelling expenses, and Mr. Magrane obtained £200. The *Gazette* showed that no case of *pleuro-pneumonia* existed. He moved an amendment—

That the opinion of the Privy Council be taken on the matter as to whether the board were justified in paying Mr. Lawlor £250 and Mr. Margrane £200 per annum when there was no cattle disease in Ireland.

Mr. Deane seconded the amendment. He thought the salaries excessive, and should be revised.

Mr. Mooney said it was not a fact that there were no pleuro-pneumonia cases reported, nor was it true that the two officers had no duties to discharge. At the meeting of the committee Mr. Lawlor stated that he was called to two cases of supposed pleuro-pneumonia, and there was no doubt that the disease might break out again now that the restrictions were removed.

The amendment was lost on a division by 14 votes to 6, and the original motion carried.

IMAGINATION AS AN ELEMENT IN STOCK BREEDING.

To the Editor of the *North British Agriculturist.*

SIR,—In two of the most recent books on live stock—Pringle's and Wallace's—it is stated that the 'imagination' of the parent has sometimes a good deal to do with the colour of the young; and in both books a number of cases are quoted in support of the general statement. Mr. Pringle quotes:—

(*a*) A case from Mr. Finlay Dun, who quoted it from George Combe, to the effect that two mares, in front of whom, immediately before union with the male, a horse with 'pretty markings' was led, gave birth to foals with markings similar to those on the led horse.

(*b*) Another case in which a grey horse used to be led in front of mares.

(*c*) Another in which a brown cow used to be led in front in cows.

(*d*) A quotation from Mr. Finlay Dun to the effect that Bates believed that the imagination of one or both parents modified the colour of the offspring.

Mr. Pringle has several other similar quotations. Prof. Wallace says:—

(*e*) That 'a well-lighted cowshed, with whitewashed walls, is believed to have an influence in making the calves lighter in colour.'

(*f*) That a pure-bred Ayrshire cow had a calf coloured dun like her neighbour—a Channel Islands cow.

(g) 'It is recorded' that Mr. M'Combie, of Tillyfour, had a high black fence round his mating paddock.

Now, does it not seem that these and similar quotations by Messrs. Pringle and Wallace are barely sufficient to support the 'imagination' theory? Is it not possible that cases (a) and (f) may be cases of reversion? We are told nothing of the pedigree of the two mares, or of the Ayrshire cow. The Ayrshire cow is said to have been 'pure bred,' but that is not sufficient. The mares or the stallion may have been related to the led horse! and the Ayrshire cow may have been the descendant of a Channel Islands cow!

All the other cases mentioned are merely opinions, or practices that had an opinion behind them; but, though they be the opinions of even such men as Bates and M'Combie, they are hardly enough. By the bye, did M'Combie really have such a high black fence as we are told of?

Professor Wallace, however, mentions an experiment at Glamis which would seem to support the 'imagination' theory. He says that 'for a number of years'—up till 1889—the Glamis cows with heifer calves were put into a field where they had a lot of Ayrshire cows and another lot of black steers for their neighbours, and that of their calves, 'about 20 per. cent.'—two to four calves annually—'were badly marked.' In 1890 both these neighbouring fields were grazed by cattle of broken colours, and six calves (the percentage is not given, but it is probably about thirty) were badly marked in 1891. In 1891 both these neighbouring fields were grazed by black cattle, and in 1892 all the calves were black.

But is it not just possible that there may have been other reasons for the reversion than that suggested by Prof. Wallace? Let me suggest:—

(i.) Why should there be so much reversion at Glamis and so little heard of elsewhere? The Glamis cows are not the only ones that have coloured neighbours?

(ii.) Do breeders of black cattle use a black fenced mating paddock?

(iii.) It is known that reversion very often follows a cross. Now, is it not possible that the cows at Glamis and the bulls may have been of different families, and even so far from being related that their being mated together was almost equivalent to the mating of two animals of different breeds? Of course, it may be asked, 'Why was there no reversion among the cows that had bull calves? That is just the question—Why?

These are very interesting points, and I should think any explanation of the difficulties would be of some value. Perhaps some of your readers may be able to throw light upon the subject.—I am, &c.,

U. G.

EXTRAORDINARY DEATH FROM GLANDERS.

Expert Opinion.

On Friday evening at the Hammersmith Coroner's Court Mr. C. L. Drew, the West London coroner, resumed an inquiry concerning the death of William Wallace, aged 47 years, of 23, Elric Street, Hammersmith.

Mr. W. Tyndale Moore, solicitor, appeared on behalf of the Road Car Company; Mr. Spencer, chief officer of the Public Controls Department and Mr. Ridler, M.R.C.V.S., watched the case on behalf of the London County Council; Mr. Fred Porch, M.R.C.V.S., and Mr. W. Hunting, F.R.C.V.S., Government Inspector, were also present, together with Dr. Charles Creighton, of Great Ormonde Street, W.C., who made a post-mortem examination.

The Coroner described the case as a most important one to the public in general, and especially to those who had horses or were employed in connection with them. There was still a broader view placed before the jury by the Coroner who observed that in the interests of science the evidence of specialists would be taken. The deceased had been employed by the London Road Car Company as horsekeeper, and according to the evidence of the widow he was always a very healthy man until the end of September, when he complained of having been bitten on the finger by a horse. He told her that one of the horses had a lump in the throat, and a few days later he said the horse had been killed. He went to work for a fortnight after he had been bitten and then complained of pains in the legs, and was treated at the West London Hospital for rheumatic fever. Afterwards he was admitted an in-patient of that hospital where he died.

Thomas Lock, a stableman, said the deceased complained of having a formation in the muscles of the left arm; it was an abscess and very hard. He had not heard of any of the horses having been ill or killed. A horse the deceased complained of as having a lump in the throat was removed from the stud.

George Jeffrey, the foreman of the Norman Road stables, said he had heard nothing of the bite, but a horse was taken out of the stud by order of the veterinary surgeon and eventually slaughtered. He knew of no cases of glanders in the stable.

Mr. Robert Porch, a veterinary surgeon to the Road Car Company said he had heard nothing of the deceased having been bitten. One day his attention was called to a horse with enlarged glands under the jaw and he ordered it to be taken from the stud and isolated. Twenty days afterwards it developed symptoms of glanders and was killed. This was the only case of this kind under the charge of deceased.

Mr. Joseph Henry Wilks, of the West London Hospital, said that the death was due to glanders. There was no evidence of a bite on the finger. There appeared to have been no bleeding although an inoculated wound might have healed.

Dr. Charles Creighton, M.D., of 28 Great Ormonde Street, W.C., deposed that he had made a post-mortem examination. The skin presented all the characteristics of farcy buds about half an inch in diameter, especially on the neck and shoulders. They were more numerous and larger on the right side. He examined the arms and found both elbow joints contained pyæmic matter. The right elbow was infiltrated with a somewhat firm whitish substance, not of a purulent character, but indicative of glanders. It was similar to that found in the lungs. The mucous membrane from the throat down to the lungs was deeply congested, and the whole of the larynx down to the bronchial tubes was covered with small farcy buds. In the lungs, more particularly on the right side, there were a number of small firm nodules of yellowish white colour, but these in themselves would not be distinctive of glanders in man, as these are also found in some forms of tubercle, but they of the same kind as usually found in a case of human glanders, and undistinguishable in appearance from the pulmonary nodules of glanders in the horse. The seat of the disease was at the right elbow, which was swollen externally, and infiltrated between the muscles, and this seat of infiltration was not connected by continuity with any observed disease in the lower part of the finger, nor was there any trace of injury on any of the fingers. The absorbent glands of the arm near the part affected were entirely free from disease. The appearances were those of a somewhat slow infective process which might have lasted a month or more—neither acute nor chronic, but something between. There was nothing to indicate the way of entrance of the virus, and he was of opinion that it

passed into the blood without the intervention of the absorbent vessels or glands. The preponderance of the disease was undoubtedly on the right side. Death was due to exhaustion following the glanders.

By the Coroner :—Farcy was more severe than glanders, and this appeared more of a case of farcy. The absence of suppuration except in the two joints was most remarkable.

The Coroner :—Can you tell the period of incubation ?

Witness :—It varies considerably ; from a day to two months.

The Coroner :—Was it possible for a man after having been bitten to continue work for 14 days before there was any sign of farcy or glanders ?

Witness :—Yes, the inflammation might last that time.

The Coroner :—Is it a contagious or infectious disease.

Witness :—That is still a disputed point.

The Coroner :—Is it possible for a man passing a glandered horse in the road to contract the disease ? No, but it might come from the frothy mucous from the nose.

The Coroner :—What was the actual cause of death ? Subacute glanders, and his impression was that it had been going on for at least a month.

Mr. Moore :—You don't agree with Mr. Erichsen then that the period of incubation extends from two days to two weeks.

Witness :—No, I go on the authority from Paris.

Mr. Moore :—May I take it in this case that the man contracted the disease by infection rather than contagion.

Witness :—The poison got into the blood without going into the absorbent system.

Mr. Moore :—Could the man go about his work with any comfort after contracting the disease ?—It depends on the acuteness of it.

By Mr. Spencer :—The disease in the subacute form was sometimes latent in horses for months. It was not necessary that there should be a wound to contract the disease. He might have inhaled it through the lungs.

The Doctor said he had omitted a most important fact that in the upper part of the nostrils he found small white granules which also pointed to the case to be one of glanders.

Mr. Porch, recalled, said he could not say for certain the dates on which three horses were killed. One a bay mare came from the stud of which the deceased had charge, but that was isolated 18 days before the disease was shewn.

Mr. Spencer :—Have there been 42 cases of glanders in your stables recently.

Mr. Moore objected to this question as it did not affect the inquiry.

Mr. Spencer :—Do you know how many cases of glanders there have been in these stables during the past six months ?—I cannot say from memory.

The Jury returned a verdict, "That the deceased died from glanders contracted in the stables of the London Road Car Company ; but how conveyed there was no evidence to show."

Through the courtesy of the Coroner and Dr. Creighton we are enabled to give the full text of post-mortem notes and pathological report.

Post-mortem Notes.

The eruptions on the skin.—Numerous nodules flat or depressed, with a small white point in the centre of many of them, single or confluent in groups, of somewhat firm or even hard consistence varying in size from a pin's head to the diameter of a third of an inch. The largest were on the forehead and neck, the next largest on the shoulders and upper arms, and on the front of the chest ; a few occurred on the fore-arm and hands, and a few on the thighs. They were thickest and of largest size on the right side in all the principal seats of their occurrence. Two, of the largest size, on the forehead, had sloughed, and had a deep red or purple appearance ; two or three on the side of the neck were partially disintegrated : elsewhere no destructive process was observed.

There was no swelling of the eyelids or other trace of erysipelas.

Nodules on the mucous membranes.—The cartilaginous septum of the nose was removed by dissecting beneath the upper lip. On the mucous membrane of one side of it was an ulcer about two or three lines in diameter, deep red, with several minute white granules in its floor. On the other side was a flat whitish nodule about a line in diameter. A similar nodule was found on the under surface of the upper lip, one of the same kind on the under surface of the epiglottis, three of the same kind in the interior of the larynx, two in the upper part of the trachea, with minute white points around them, and several smaller white nodules in the lower part of the trachea and in the right and left bronchii. The mucous membrane from the throat to the lungs was dusky red.

The lungs.—The disease was confined to the upper and middle lobes of the right lung and to the upper lobe of the left. Close to the surface could be felt numerous isolated masses, varying in size at their peripheral end or base from a quarter to three quarters of an inch in the longest direction. On section they were found to be of somewhat firm consistence, greyish white, with a cheesy broad base on the pleura and a convex margin towards the interior of the organ, resembling in all respects infarcts or formation within the vascular territory of terminal branches of the pulmonary artery. In one of these incised, the outer zone was of coagulated blood, only a small superficial area, the middle being greyish white. They were most numerous in the right lung, being confined almost to the apex of the left, the lower lobe of the right lung was firmly adherent to the diaphragm, and was collapsed ; the lower lobe of the left lung was œdematous and congested.

Other organs.—The right ventricle of the heart was empty. A partially discolourized clot projected from the vena cava inferior into the right auricle. The spleen was of normal colour externally, not diffluent within, of average size, the left kidney was somewhat large, its substance somewhat cloudy, the liver was normal there was no congestion in any part of the small intestine, nor in the cœcum.

Lymphatic gland.—The bronchial glands were normal, also the mesenteric, the glands of the right axilla were displayed by reflecting the pectoralis major muscle, and were seen hanging in a cluster of small red bodies, unaffected by the disease. The chain of posterior cervical glands were also displayed by an incision along the posterior border of the sternomastoid muscle, and found to be small red bodies the same as in the axilla. The absorbent glands under the chin were also normal.

Muscles and Joints.—An incision three inches above and three inches below the bend of the right elbow, corresponding to a swollen region of the limb, revealed a remarkable infiltration of the group of pronating and flexing muscles of the forearm attached to the inner condyle, the infiltration was about three inches long and and inch and a half deep, of yellowish-white colour, somewhat firm consistence, caseous, nowhere purulent ; it occurred between the several muscles, and also mottled their substance. When the capsule of the elbow joint was punctured at the bottom of the mass, greenish-yellow pus welled out, somewhat thin.

A corresponding incision of the left elbow revealed œdema of the tissues under the skin, but no infiltration of the muscles, which looked normal in colour and consistence. When the joint was opened, a thin greenish-yellow pus flowed out, as on the right side.

The Hands.—There was no trace of wound or other

injury on the fingers of either hand, or in the hands generally.

The summary and diagnosis are given in the Report.

REPORT.

The examination was made by me at the Mortuary, Hammersmith, at 11 a.m. of the 28th October, in the presence of Mr. Pepper, F.R.C.S., representing the Road Car Company, Mr. Hunting, and Mr. Ridler, Inspectors of the London County Council under the Contagious Diseases (Animals) Act, the veterinary surgeons of the Company, and others.

The notes of the examination are appended. The following are the conclusions :—

The numerous nodules on the skin are the characteristic farcy-buds of a case of glanders in man progressing somewhat slowly. They were most abundant on the right side, and of largest average size on the neck and forehead, where two of the largest had sloughed and one or two others were partially sloughed.

The ulcer on one side of the cartilaginous septum of the nostrils, with small white granules in its floor, is distinctive of glanders in man. The yellowish-white flat nodules in the following situations, namely, the other side of the nasal septum, the under surface of the upper lip, the interior of the larynx and the windpipe are distinctive in their appearances and in their situation in a series.

The formations in the lungs would not be distinctive by themselves of glanders in man, inasmuch as the same peripheral masses, more or less wedge-shaped, with the broad end outwards, are found in some forms of tubercle, in which also the colour and consistence may be the same as in this case. But they are precisely of the kind usually found in the lungs in cases of human glanders, and are undistinguishable in appearance from the pulmonary nodules of glanders in the horse.

The remarkable infiltration of the pronating and flexing group of muscles of the right forearm is in a situation which M. Brouardel specifies as one of the most usual situations for such infiltration in human glanders. The substance was neither purulent nor phlegmonous, but of the same yellowish-white, somewhat firm consistence as in the lungs. The suppuration within both elbow joints is the same as in pyæmia.

The seat of infiltration at the right elbow was not connected by continuity with any observed disease in the lower part of the forearm ; nor was there any trace of injury on the fingers of the right or left hand.

The complete immunity of the lymphatic or absorbent glands in all the affected regions is noteworthy. It points to the virus having circulated with the blood, and not in the lymphatics.

The appearances were, on the whole, those of a somewhat slow infective process, which might have lasted a month or more—neither acute nor chronic, but something between.

The anatomical examination does not enable me to offer an opinion as to the way of entrance of the virus ; but I am of opinion as indicated above, that it passed into the blood without the intervention of the lymphatic or absorbent vessels and glands. The preponderance of disease was undoubtedly on the right side of the body, both externally and internally, but the fact has no very clear significance.

C. CREIGHTON, M.D.

28 Great Ormond Street, W.C.

PROTOZOA AND DISEASE.

Being Extracts from the Second Hunterian Lecture delivered before the Hunterian Society.

By M. ARMAND RUFFER, M.A., M.D.

Mr. PRESIDENT and GENTLEMEN :—I feel deeply the honour you have done me in asking me to give this Hunterian lecture, and, whilst thanking you, let me add that I have tried to follow Hunter's spirit by controlling, in collaboration with Dr. Plimmer, almost every fact of which I shall speak by direct observation.

A few years only have elapsed since protozoa were first recognised as being the causative agents in a specific endemic disease, that is, malaria. Before that time their presence had been occasionally observed in both man and animals, but the fact attracted little attention until a French military surgeon proved that typical protozoa were to be found in every case of malaria. The same observer traced the life-history of this parasite, and although some of his interpretations have since been found to be incorrect, yet but little has been added to the actual facts which he published in his original papers. His observations and their interpretations raised a perfect storm of opposition : and, strangely enough, the leaders of it were the very scientists who years afterwards, claimed the priority of his discovery. Since that time, however, the protozoon of malaria, which may be called the hæmatophyllum malariæ (the name plasmodium malariæ being hopelessly inaccurate) has been discovered by competent men in every country where malaria is endemic.

All attemps hitherto at cultivating it have been unsuccessful, nor has it yet been isolated from the soil or water of malarious districts. Our knowledge, therefore, is based only on examinations of blood taken from malarial patients, or of their organs after death.

This organism measures from 1 *u* to 10 *u*, but its shape is no doubt influenced by its habitat at the time of observation, as it is often flat and wedge-shaped when met with in the red blood corpuscles, and spherical when free. The organisms are as a rule naked ; the semilunar forms alone, which are now regarded as conjugation forms, being surrounded by a membrane possessing a double contour, and which is not infrequently tinged with hæmoglobin. Each parasite possesses :

1. A nucleus and nucleolus ; which latter, however, cannot be seen in the living protozoon.
2. A body, which is sometimes granular, and contains lightly refracting corpuscles ; and which cannot be differentiated into an endosarc and ectosarc.
3. Protoplasmic processes.

The parasites are amœboid, change their shape, and their contents (nucleus, melanin corpuscles) are often in active Brownian movement. The movements of the parasites are not powerful enough to produce locomotion ; this is effected by means of the long whip-like processes, which vary in number from one to five, and the lashings and twistings of which among the red blood corpuscles in coverglass preparations are one of the most wonderful sights it is possible to witness with the microscope. The observer who has specially studied their formation is of opinion that they occur in all varieties of malaria, and that they enable the parasitic protozoa to adapt themselves to a saprophytic mode of existence. Some of the parasites may be actually in the red blood corpuscles, or else merely lying on them, or floating freely in the surrounding plasma. The infested blood corpuscle naturally enough does not thrive under such conditions ; its hæmoglobin gradually becomes absorbed by the protozoon, and in the end the corpuscle disappears and nothing is left but an empty shell.

The multiplication is effected by simple division into a number of spores. This process of division is best seen in patients suffering from quartan fever, and its extent varies somewhat in the different kinds of malaria Another mode of reproduction may be studied in the pernicious forms of malaria, for, according to one author, the semilunar bodies met with in such fevers are formed by the conjugation of two such parasites, the fusion having been actually observed to take place under the microscope. The conjugation is followed by encystment and sporulation.

Later investigations have shown that although the hæmatophyllum malariæ is met with in every case of the disease, yet several kinds of it exist, and that the clinical manifestations of the malady are dependent on the presence and life-history of a specific parasite. These varieties may be divided as follows:—

I. Malaria parasites with sporulation and without semilunar bodies:
(*a*) Parasite of quartan fever.
(*b*) Parasite of tertian fever.

II. Malaria parasites with sporulatian and formation of semilunar bodies:
(*a*) Pigmented parasite of quotidian fever.
(*b*) Unpigmented parasite of quotidian fever.
(*c*) Parasite of malignant tertian fever. (Mannaberg).

We see, therefore, that there are probably as many varieties of protozoa as there are of pathogenic vegetable organisms.

A fact worthy of notice is that in many malarious places the birds inhabiting the district are infested by protozoa, which resemble in many respects those of malaria, and which are, in all probability, simply a variety of the same parasites. It is curious that these may be found in the bone marrow of birds when none can be discovered in the blood.

I have taken the hæmatophyllum malariæ as the type of the protozoa which live in the plasma or red blood corpuscles, or, at any rate, multiply in the blood during some period of their existence; but, as you know, there are other protozoa which infest the tissues of the body, some preferring the muscles, some the connective tissue, others, again, the nervous system, whilst a large number live in the epithelium cells. It is the latter class that we shall discuss to-day.

For pathological purposes, they may be divided into those which are not accompanied by a proliferation of the epithelium cells, and those which cause or are accompanied by such a proliferation. No doubt this classification is one which any zoologist would refuse to endorse; but let me ask you to accept it merely for the sake of illustrating my meaning.

Protozoa in Snails.

We will take the klossia helicina, which inhabits the kidney of the snail, as the type of the first class of parasites. Its life-history is rather a complicated one. Shortly stated, the full-grown parasite encysts itself, and breaks up into a number of spores, in the interior of which falciform embryos ultimately develop. These spores burst, the liberated falciform embryos are then either voided with the secretion of the kidneys, or enter into another epithelium cell, grow into a mature animal, and go through the same cycle again. Of the symptoms presented by such snails, we know nothing, for obvious reasons. We have kept infected snails in the laboratory, and none of them died; and the kidney of a diseased snail could be distinguished from that of a healthy one through microscopical examination oniy. In order to settle the question as to whether the klossia produced any epithelial proliferation, serial sections were cut through the entire kidney. No sign of undue multiplication of cells was ever seen, even in the kidneys which contained the largest number of parasites. We noticed nothing to show that these gregarines produced any marked inflammatory lesion, and, in fact, we were astonished to find a total absence of reaction on the part of the infected tissues. The only lesion which could be detected was that the infected cell elongates, gradually becomes detached, and falls into the lumen of the urinary tube. As the parasite grows, the cell is after a time reduced to a mere shell surrounding it. When the spores burst, the *débris* of the cell are simply excreted with the secretion of the kidney.

Protozoa in Vaccinia.

Another parasite which is apparently accompanied by little or no proliferation of epithelium is that seen after vaccination.

If one examines the epithelial cells at the point of inoculation of vaccinia forty-eight hours after this operation, one finds that the majority contain in their protoplasm round bodies, easily stainable with both nuclear and protoplasmic dyes. These are surrounded by a sharply limited clear space. They have no recognisable capsule, but lie quite free in the protoplasm, and with high powers of the microscope it is often possible to make out in their centre a spot which may perhaps be considered as their nucleus. These bodies multiply by fission and segmentation into two or multiples of two, and gradually invade the deeper layers of the epithelium, and even the connective tissue beneath. Their size varies, but as a rule it is constant, except just before division. They are many times larger than micrococci but smaller than the parasites of cancer. On the third day many wander into the connective tissue, and some are taken up by leucocytes even before they leave the epithelium cells. Their ultimate fate, however, is uncertain, as on the fourth day the emigration of leucocytes is so great that, in the absence of well-marked staining reaction, we do not feel competent to distinguish them with certainty among the mass of leucocytes, necrotic *débris*, red blood corpuscles, micrococci, etc., which are found in the interior of a vaccine pustule. The same and other reasons prevent us from making any statements as to their number in vaccine kept outside the body, though such structures may be undoubtedly found in it. As has been seen from the above, these protozoa of vaccinia differ from the structures which we are to describe presently as the parasites of cancer in size, staining reactions, and structure, but they resemble them in the fact that they possess a similar mode of division. As to their pathogenic properties we know absolutely nothing.

Nevertheless, although we have no sure knowledge of the pathogenic properties of these parasites, although their life-history is but imperfectly known, there are several reasons, such as the failure of bacteriologists hitherto to isolate from vaccinia any micro-organism, which might be considered as the cause of the malady, the spread of the disease along certain epithelial surfaces, etc., which would lead us to believe that both vaccinia and variola are probably due not to a vegetable micro-organism, but to a protozoon. They would differ, however, from most affections caused by protozoa by the fact that in them one attack is protective against another, for a time at least, which is not usually the case in disease due to protozoa. I think it only fair to state that it was the remarkable work of Guarnieri (a copy of which was courteously sent me by the author) which caused us to reinvestigate this matter.

Protozoa in Rabbits.

We may now turn to a protozoon which produces proliferation of epithelium cells, namely, the coccidium

oviforme. This attacks rabbits chiefly, and gives rise to the small adenomata so frequently found in the liver of such animals. Its life-history is so well-known that no account of it is necessary, but the disease produced by it is interesting because, clinically and pathologically speaking, it occupies a position intermediate between malaria and cancer. Like malaria, the disease is endemic in certain places, attacking nearly all the rabbits in a warren, or in a stable, and sometimes proving fatal to almost all the young animals. Its course is at first acute; the animals lose flesh, are attacked with diarrhœa and die. At the post-mortem examination, the disease is localised in the alimentary tract and the liver. In the intestine, the foci are situated chiefly in the mucous membrane of the upper part of the intestine, and look to the naked eye like white irregular spots, which occupy at times most of the intestinal wall. In the liver, at this stage, they form small tumours situated in the bile ducts, and distending the same. These are filled with a thick creamy substance consisting of pus, epithelial cells, coccidia, etc., whilst the whole is surrounded by a capsule of fibrous tissue, sending branching prolongations into the interior of the tumour. The epithelium proliferates and lines each one of these prolongations. These are the appearances seen when the animal dies in the acute stage of the disease; but should it recover, the little tumours in the liver become encapsuled, and on section present all the appearance of a parasitic adenoma, each branching prolongation being surrounded by connective tissue, which encapsules it and isolates it from the remainder of the liver substance. In a later stage, the epithelium disappears by a process which will be explained later on, and the little tumour becomes a fibrous nodule. Here then we have a disease which is caused by a protozoon, which may live in the epithelium cell, but which may also thrive even outside the cell in the body, and which produces an acute febrile disease, followed by a chronic process and accompanied by marked proliferation of epithelium cells.

Protozoa in Cancer.

The next point in my paper is the description of the structures, now considered by several pathologists and zoologists as protoza, and which occur in all cases of cancer in man; but I am fully aware, and I warn you, that the interpretation which we put on such structures is not accepted by many pathologists.

The protozoa are found in the epithelium cells of carcinoma, and are round bodies, varying from 0·004μ to 0·04μ in diameter. They consist of a central part, or nucleus, which, as a rule, stains deeply with appropriate dyes. This is surrounded by a layer of protoplasm, which stains less deeply, and which, after the protozoon has attained a certain size, has a more or less radiated appearance. Surrounding the whole is a capsule. This capsule was at first thought to be secreted by the infected cell, as a kind of protecting membrane; but, on the other hand, it is no uncommon thing to find the capsule folded on itself. The protozoon may also be seen lying free in an alveolus, still surrounded by its capsule, so that the latter must be a part of the protozoon. The protoplasm of the protozoon is either quite homogeneous, or it contains a few granules, or the rays before referred to, which may be seen, in some cases, extending, both from the central part towards the periphery and from the periphery towards the centre.

Sometimes the granules I have mentioned will arrange themselves in a very regular radial manner close to the capsule, and the protozoon then resembles very closely the coccidia found in the rabbit's liver.

(To be continued.)

CORRESPONDENCE

THE COUNCIL AND THE REGISTRATION OF FARRIERS.

Sir,

I observe in this week's *Veterinary Record* Mr. J. A. W. Dollar remarks "the fate of the special general meeting resolution will excite no surprise."

This may be the case with those to whom the ways of the Council are most familiar, but I should think to the great body of the profession, it must be received with very considerable astonishment. The resolution involved a question of the utmost importance to the profession, as a body of gentlemen who have a regard for their honour and professional integrity, and it is certainly, to say the least of it, remarkable to the uninitiated that the matter should be hurried into oblivion in the very uncerimonioua manner in which it is reported to have been. I do not suppose the strongest supporters of the resolution expected for one moment it would be immediately adopted without discussion, but I certainly believe the profession expected as a right that the matter would receive proper and unprejudiced consideration.

The working of the scheme for the Registration of Shoeing Smiths is one of the gravest scandals the veterinary profesion has ever had to endure, and although some alterations, we are told, have been made in the examinations, yet our information is of the most meagre description, and the kind of Registered Shoeing-Smith we sometimes meet with is not the man to inspire us with confidence in the character of the examination he has passed. I refer more particularly to the manual work, as the absurdities of the "theory" are now quite common knowledge. On one occasion a man emblazoned with the R.S.S. was endeavouring to impress me with his anatomical attainments, and he mentioned a "white line round the coronet" as "what is called the anatomy of the horse's foot." I felt sorry then, as I have on several similar occasions, that any members of the veterinary profession should be responsible for the working of the Registration of Shoeing-Smiths scheme, more particularly as our "dignity" has been fondly dwelt upon for so many years that some of us had almost begun to believe in it. I do not, however, complain of the lack of dignity evinced by the Council in so promptly "sitting upon" the *bête noir* of October 19th, but I am certainly surprized that our worthy representatives did not think it necessary to treat the resolution in question with more respect and consideration.—Yours truly,

Henry C. Wilkie.

Sir,

Carlyle once explained that there was nothing to prevent anyone calling the universe a machine. He seemed to think it was merely evidence of the taste and sense of proportion possessed by the individual using the term. In even very much smaller things this want of proportion is noticeable, and in last week's *Record* Mr. Jno. A. W. Dollar gives a notable illustration. He is speaking of the Council of the R.C.V.S. and uses the phrase "No regard for professional honour can weigh against expediency." Does he really mean that our representative body is devoid of professional honour, or does he only mean that *he* does not approve of their action? The simple fact is, that the Council some years ago adopted a certain scheme. A special general meeting of the profession a few months since carried a resolution by a majority of six, disapproving the Council's action. The Council at a recent meeting declined to adopt the resolution of the meeting. Mr. Dollar represents this disagreement by the following contrast—"Given on the

one hand a Council sitting in judgment on its own actions, and on the other a few men seeking justice, etc." Surely Mr. Dollar will allow that the Council might be seeking justice as much as the few men at the meeting, and it is not very difficult to understand how men on a Council, or anywhere else, may decline to alter a judgment they have formed and acted upon—they considered the matter before they formed their judgment, and some good reasons must be adduced to make them alter it if they be not all weathercocks.

Mr. Dollar probably thinks there are good reasons for an alteration, but unfortunately the Council does not think so, and they must be convinced of this error not by "Clouds of words, shifting sails, appeals to credulity or prejudice" but by "clear and straightforward" statements of fact.

Mr. Dollar says Dr. Fleming has resigned his position on the Registration Committee—he has done nothing of the sort. Mr. Dollar puts in an interrogative form certain statements which he should have verified before quoting in a form which implies more than is fact. "The Company has never yet conducted a manual examination itself." It may appease Mr. Dollar to know that it has.

"The Company is trying to pin itself on to the coat tails of any Agricultural Society which will do its work for it." This is "the clear and straightforward" way of saying that whenever the Registration Committee can arrange to work with an Agricultural Society holding a horse-shoeing competition it does so, and thus is able to have a sound good test of the farriers ability practically and theoretically before registering him. "What the company has done with its funds?" I cannot say. The Duke of Westminster is chair of the committee and Mr. Wym Baxter, secretary. Both are public men "Our representatives render no report." Fifty copies of the committee's report were received by the Council of the R.C.V.S. this year, and the delegates to the committee sent by the Council could say no more than was said by the united representatives of the Royal Agricultural Society, of the Farriers Company, and of the Royal College of Veterinary Surgeons.

Honour, justice, and virtue, are grand things. I credit Mr. Dollar with a full share of them, but he should not claim a monopoly. He might allow that even a member of the Council of the R.C.V.S., or a member of the Worshipful Company of Farriers, or a member of the Royal Agricultural Society might, perchance, not be quite destitute of these attributes. He will remember a certain prophet of old who by a somewhat narrow introspective research arrived at the conclusion that he was the only righteous man in Israel. How that patriarch must have blushed when he found that there were still 7000 other good men in the land!

If we leave out all hyperbole and inflated rhetoric we shall get this question better understood, and possibly find a line on which we can all act together for our own and others' good.

CONSISTENCY.

ACORN POISONING.

SIR,

I have received a communication from Dr. G. Tate, of 96 Duke Street, Liverpool, an eminent analyist and bacteriologist, in which he expressed a desire to analyse a portion of the contents of the abomasum in a case of acorn poisoning, he is also anxious to have a section of the diseased intestine.

It is imperative that each specimen should not have undergone decomposition.

Perhaps some veterinary surgeon who is interested in this disease may have a fatal case and would forward to the above name a specimen.—Yours faithfully,

H. C. HARRISON.

SIR,

Enclosed I beg to hand you for publication a selection of Registered Farriers' billheads which I think go far to answer the question—Do Registered Shoeing Smiths wilfully misrepresent the nature of their qualification?

I am, Sir, your obedient Servant,

JNO. A. W. DOLLAR.

2, CAMPBELL ROAD, FINSBURY PARK, 189

M DR. TO G. PAYNE,

Certificated, R.S.S.

Exam. and Pass. by Dr. Fleming, C.B., F.R.C.V.S., and Professor Pritchard, M.R.C.V.S.

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Horses Shod on the most Improved Principles.

By Contract or Otherwise.

LONDON, 189

To J. THIRTLE, R.S.S.

(*From Woodger & Broad, M.R.C.V.S, Veterinary Surgeons,*)

(Late Hoadley's)

HORSE SHOEING ESTABLISHMENT,

18, SHIRLAND MEWS, FERNHEAD ROAD, W.

Horses Shod with great care and attention.

Genuine Horse Medicines supplied.

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To W. WAY, R.S.S.,

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Hunter's and Ladies' Hacks Shod on the latest and Approved Principles.

Estimates given for Shoeing and Veterinary Attendance.

Agents for the "Charlier" Patent Shoe.

ALL COMMUNICATIONS TO BE ADDRESSED TO

1A, WALLGRAVE ROAD, EARL'S COURT.

VETERINARY SURGEONS EVIDENCE IN COURT.

The letter which appeared last week from a solicitor has drawn replies from "Honesty" and "Justice" saying they meant no reflection on the veterinary surgeon who gave evidence for the defence.

We do not publish these letters because we think the subject better discussed with reference to no special case and no special person. We also suggest it might be done more effectively above the name of the writers.

THE BLAKE PERSECUTION.

SIR,

Would it not be a good thing for some united action to be taken and raise a fund to defend these frequent actions of the "Cruelty" Society against veterinary surgeons?

I should be pleased to subscribe to any fund opened to reimburse Mr. Blake for the costs in defending his action and thus reinstate him in the good opinion of his profession and of his townsmen.—Yours faithfully,

J. B. MARTIN.

Rochester.

COMMUNICATIONS, BOOKS, AND PAPERS RECEIVED:—Messrs. A. H. Farrow, W. S. Adams, J. A. W. Dollar, J. P. S. Walker, H. G. Bowes, W. L. Greenhalgh, H. C. Harrison, W. A. Stanway, "Not a Vet." "Weekly Scotsman."

We shall be obliged by early intelligence of all matters worth bringing under the notice of the profession, and thankful to any friends who may send us cuttings from local papers, containing facts of interest.